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Changing Motorcycle Rider Safety Attitudes and Motives for Risk Taking: Process Evaluation of a Rider Training Intervention

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Abstract

Risk-taking behaviour by motorcyclists has been shown to contribute to a substantial proportion of road crashes in Australia and abroad. Concern has been expressed that traditional motorcycle licence training programs do not sufficiently address such behaviour. Accordingly, the Three Steps to Safer Riding program was developed to address risk taking behaviour by riders as an adjunct to existing skills-based rider training. The program was designed to be delivered in a one hour classroom session at the start of training, with a 20 minute debrief to revise the key concepts at the end of training. This paper reports on the key training concepts, methodology and implementation of the pilot program with a major rider training organisation in Queensland and presents findings from a process evaluation. The Three Steps to Safer Riding intervention pilot was delivered to 518 learner riders over a three month period. Follow-up focus groups and one interview with intervention participants (N=18) five to eight months after completion of the program suggest that new riders (absolute novices) embraced and internalised many of the intervention concepts. However, some riders who had previous riding experience prior to training stated these issues were common sense, yet still expressed riding styles that were contrary to some of the key intervention messages. This is discussed in terms of raising awareness of risk issues for motorcyclists versus behaviour change. Additionally, interviews conducted with riding instructors are discussed regarding logistical challenges of implementation, training consistency, skills required to deliver the program, support for the program, and student engagement.

Keywords

Motorcycle, training, education, attitude, evaluation

Introduction

Risk-taking behaviour by motorcyclists has been shown to contribute to a substantial proportion of road crashes and casualties in Australia and abroad. For example, for single-vehicle motorcycle rider and pillion fatalities in Australia during the period 2003-2007, speed was implicated in 70%, whilst riding under the influence of alcohol or drugs was involved in 46% [1]. Concern has been expressed that traditional motorcycle licence training programs do not sufficiently address such behaviour [2,3,4]. Indeed, reviews of motorcycle rider training programs have found that the vast majority of existing training is focussed on vehicle-handling skills with comparatively little attention to attitudes and motives towards risk taking [5,6]. Accordingly, the Three Steps to Safer Riding program was developed to address risk-taking behaviour by motorcyclists as an adjunct to existing skills-based rider training.

Background to The Three Steps to Safer Riding Program

The Three Steps to Safer Riding program is delivered in conjunction with an industry partner organisation in Queensland as part of their Q-Ride¹ competency-based licence training. The pilot intervention was designed to be delivered by rider trainers in a one hour group classroom session at the start of training, with a 20 minute debrief to revise the key concepts at the end of training for each individual.

¹ Q-Ride is a voluntary, competency-based motorcycle training and licensing option within Queensland where training is delivered by registered service providers throughout the State. Q-Ride assesses both provisional (restricted) motorcycle licences and open motorcycle licences. No pre-learner motorcycle training requirement currently exists in Queensland. Refer Queensland Transport for further details.

Development of the program was guided by previous research by Watson et al. [7] that explored the psychosocial influences on risk taking by motorcyclists. Key concepts in the pilot intervention were framed around risky riding behaviours found in that research. For face validity of the program it was imperative to use the terminology of risk as described by riders. Whilst Watson et al. found six conceptual clusters of riding behaviours that were deemed by motorcyclists to impact on safety; due to the time constraints of the training regime in which the intervention pilot was delivered, the scope of the program was restricted to specifically address three of these: pushing limits; bending road rules; and extreme speeds and stunts. These were chosen because they were most congruent with the aims of the intervention and were not already explicitly addressed in these terms in the existing standard training program provided by the industry partner or broader public education campaigns. The pilot intervention also addressed the main psychosocial influences that were found by Watson et al. to underpin risky riding behaviours: personality (sensation seeking and riding aggression); and peer influence. Additionally, emotions and feelings were addressed as part of the pilot intervention due to the hedonic nature of motorcycling for many riders.

Whilst the previous research by Watson et al. provided a basic framework for issues to address in the intervention, the project development team included the Chief Instructor from the partner organisation in addition to academics. The Chief Instructor's wealth of practical experience was valuable in ensuring the intervention was practical, suitable for the target audience, and suitable for delivery by rider trainers.

The GADGET (GDE) matrix [8] developed in Europe to guide innovative driver and rider training programs provided the basic intervention rationale; to facilitate the recognition by trainees of their own personal risk factors that were likely to impact on their safety while riding. Beyond awareness raising the intervention also aimed to challenge dysfunctional beliefs about risky riding, assist in the recognition of antecedents to risky behaviours, and provide management strategies for common riding risks. Crash scenarios and rider quotes from real life events were utilised to engage students in discussion about the risks encountered in motorcycling. These were framed around the key concepts mentioned earlier. It was also decided to incorporate several different presentation media/resources into the program such as Powerpoint slides and video vignettes (filmed specifically for the program) to aid in consistency of delivery and maximise learning potential for trainee riders [see 9]. Additionally, a take home "toolkit" booklet was designed to promote self-monitoring of riding risks and situations encountered once licensed and unaccompanied.

Instructors were initially trained by CARRS-Q personnel then subsequently monitored by the Chief Instructor to ensure training delivery consistent with the overall objectives of the program. Additionally, a preliminary study was undertaken to assess if the educational skills of the instructors were suitable for delivery of a program of this nature [9].

A comprehensive overview of the content of the Three Steps to Safer Riding intervention program and the theoretical principles that underlie its development is beyond the scope of this paper, and further protected by commercial intellectual property agreements. However, the background information outlined above provides the reader with sufficient knowledge to assist in understanding some of the issues presented in the following sections. The primary aim of this paper is to report details from the qualitative formative evaluation that was undertaken to inform further refinement of the Three Steps to Safer Riding program in terms of concepts covered and delivery protocols².

Method

The intervention was piloted over a three month period with 518 participants (76% male) completing training at one of the industry partner's training sites in Brisbane. It was originally planned to run a concurrent control group receiving the standard training (without the intervention) at a second training site of the same organisation for comparison of quantitative data. However, a decline in the industry partner's business at the second site resulted in this research design being unmanageable and it was decided to deliver the intervention and control sessions in three month blocks at the same site. Whilst

² This paper represents an abbreviated version of a process evaluation undertaken for the Three Steps to Safer Riding intervention pilot and for brevity provides an overview of some of the initial findings. A complete evaluation will be presented at a latter date in the form of a project report by CARRS-Q.

quantitative data is not reported in this paper, the practical difficulties encountered due to the change in research design have implications for the process evaluation that follows.

Two forms of qualitative data were utilised in the process evaluation: 1) individual interviews with four riding instructors (trainers) and the Chief Instructor that were all involved in delivery of the intervention; and 2) three focus groups (N = 17) and one individual semi-structured interview with participants of the intervention. Qualitative data collection occurred five to eight months following commencement of the pilot intervention trial. However, participants who completed the intervention may have done so at any stage during the course of the three month trial.

Riding trainees that participated in the focus groups and individual interview were recruited by telephone and were selected at random from the available pool of original intervention participants. They were each compensated for their time by the partner organisation with issue of a voucher for a further half day training course. Participation in the instructor interviews as well as the focus groups and interview with intervention participants was voluntary. Whilst the focus groups and individual interview with intervention participants were anonymous, the instructors were known to the researchers. However, the confidentiality of all individuals in data reporting was assured in accordance with Queensland University of Technology Human Research Ethics Committee approval and no individual identifiers will be reported in this paper.

Questions relating the instructor interviews explored issues such as program acceptance by instructors, ease of delivery, and perceived effectiveness of the program for subgroups of riders. A list of the instructor interview questions can be found in Appendix A. Questions relating to the focus groups with intervention participants explored issues such as what information was retained from the intervention, the perceived usefulness of intervention concepts, presentation media/resources, teaching techniques, and the level at which the intervention challenged beliefs about risky riding. Identical questions were used for the individual interview and the focus groups. A list of these questions can be found in Appendix B.

Focus groups and the individual interview with intervention participants each took between one and a half hours and two hours to complete. Instructor interviews took between 30 minutes and one hour to complete. Focus groups were conducted until saturation of the data was achieved (i.e. until no new/unique information was forthcoming). Auditory recording of each session was undertaken. Additionally, notes were taken by two researchers (the facilitator and an observer) to enhance the reliability of the data. Conceptual content analysis was undertaken to identify key themes in the data. The qualitative method was chosen in order to obtain a richness of data that could not be obtained using quantitative measurement.

Results

Instructor Interviews

The instructors reported that whilst they each took several sessions to become familiar with the new training program, the timeframe for delivery was manageable after delivering several sessions. There was general consensus that any qualified trainer should have the skills to easily deliver the intervention and that students generally engaged in the pilot program. One instructor did however mention that sometimes students became a bit “brain dead” with information overload. This has implications for the amount of information covered in the intervention and the placement of the intervention within the overall training course.

There were several key themes that were apparent in the interviews with instructors:

1. instructors supported the new direction in training (i.e. attitudes / thinking about risks / rider behaviour);
2. due to the time constraints the intervention may be better served by focussing on fewer issues, allowing for more elaboration / in-depth discussion where required. That is, some streamlining was required;
3. the “toolkit” required further consultation with the instructors for understanding of the aims of this resource, how it may have been better utilised within the training program, and how it may be refined (trimmed).

Whilst most instructors felt that the Three Steps to Safer Riding pilot intervention had equal impact for all rider groups (e.g. new, experienced, male, female), one trainer mentioned that experienced male riders may simply give “lip service” during discussion of some of the issues and continue to take risks once licensed as some behaviours such as extreme speeds and stunts are their basic reason for riding. Contrary to this, the Chief Instructor expressed a belief that the program would be very useful for post-licence training courses to address some of the risks that experienced riders take.

Additionally, there were suggestions for how to continue students’ engagement in the program. These included follow-up telephone contact with riders and incentives / rewards for completing on-going aspects of the program if introduced. It was suggested that to optimally engage students the question of “what’s in it for me” from a student perspective should always be considered. It was also mentioned that it was sometimes impossible not to address intervention concepts in the standard control training sessions as they arose in general discussion (thereby possibly limiting the comparable effect of the new program). This point was elaborated by the Chief Instructor. That is, the standard training program always addressed rider behaviour, however not in a structured manner. Therefore, whilst the terminology may not be the same, there is some overlap in the essential concepts and messages. This may have implications for trainee responses to questionnaire items, potentially limiting differences in responses between the intervention pilot and control groups.

The Chief Instructor was also consulted regarding management / business aspects of conducting the trial, and in terms of the future sustainability of the training program. It was evident that, whilst the research trial presented several challenges (time issues, database management), continuance of the actual intervention training program was quite manageable as there would no longer be the need to complete questionnaires for research purposes which were time consuming. Hence, it appears that the Three Steps to Safer Riding program (as a marketable product) would be able to be readily adapted for other rider training organisations. The greatest management challenges during the pilot intervention were the closure of one training facility and a change in legislation regarding Q-Ride.

Training delivery during the intervention pilot was considered fairly consistent by the Chief Instructor across time and different trainers. However, it was noted that the more sessions each trainer completed, the more comprehensive knowledge store they had in regard to student perspectives / discussion on each of the intervention concepts. Additionally, as the Chief Instructor was required to observe each trainer and complete a checklist regarding intervention delivery, he gave feedback to each of them where required as a process of continual refinement. Therefore, delivery refinement may have possibly impacted on consistency for each trainer over time.

Intervention Participant Focus Groups and Individual Interview

Data emerged from two main subgroups: 1) trainees who had never ridden before; and 2) those with some prior riding experience. Initial analysis of the discussions with these riders suggests that new riders (absolute novices) embraced and internalised many of the intervention concepts. However it was difficult to centre discussions on *only* the intervention information as they did not see the Three Steps to Safer Riding intervention as distinctly different from the rest of their training. That is, they appear to have fused the intervention concepts into their global understanding of riding, as intended with the intervention. The majority of new riders had initially used the “toolkit” booklet (to a minimal extent) to put the riding tips into practice and reported that the concepts had now largely become second nature to them.

For riders who had some previous experience prior to training there were mixed results, with some riders supporting and utilising the intervention information in their subsequent riding whilst others felt it was all “common sense” and that they didn’t need to be told what they should (or should not) be doing when they ride. Whilst they stated these issues were common sense, some riders still expressed riding styles that were contrary to some of the key messages (e.g. bending road rules) or felt the concepts may be useful for ‘other’ riders. Some riders reported that it was only when they experienced an incident on-road subsequent to licensing that they thought of some of the intervention issues.

Several issues regarding the delivery of the intervention became evident during discussions. Firstly, the majority of participants felt the trainers did a great job, however the timing of the intervention within their overall training could be changed to provide them with better understanding of how the principles related to actual on-road riding. That is, they felt that the information would have more personal meaning

following some practical riding experience during training rather than the main body of information delivered in the classroom prior to riding. Secondly, it was evident that the change in Q-Ride legislation during the trial resulted in the industry partner being much busier than usual during the month prior to introduction of the legislation, and that some trainees “tuned out” to the classroom sessions as they were sometimes conducted at night with no practical riding immediately after. Thirdly, some participants reported that they filled out paperwork at the end of training (e.g. questionnaires) with no review of the intervention concepts as originally intended with the debrief session. Some riders felt they would benefit greatly from a discussion with the instructors regarding their road ride at this point (review).

Discussion

There are several important implications for the content of the Three Steps to Safer Riding program that arose from this research. Additionally, there are implications for the future delivery of the intervention and, in a broader sense, the introduction of any new training program.

The instructors appeared to have embraced the intervention concepts and were supportive of the need to introduce new training content to address risk taking. This finding was positive as organisational change and the introduction of new concepts is often met with resistance in the workplace [10]. Several measures were taken during the introduction of the intervention pilot to quell any anxiety that instructors may have had in relation to the change in their routine. Firstly, two train the trainer sessions were conducted by CARRS-Q personnel to outline the rationale for the intervention to instructors and conduct a ‘dummy run’ of the program to show how the program was to be delivered and to answer any questions. Secondly, the Chief Instructor played a pivotal role in promoting the intervention to instructors and offering his guidance, support, and feedback to them throughout the intervention trial. Hence, to enhance the success of any new training program similar processes are encouraged.

The ease of delivery reported by instructors may be predominantly because of the structured program delivery design. Whilst the individual training style of instructors should not be thwarted, it appears important for timing and consistency to structure delivery progression. Powerpoint slides with each issue progressively included and video vignettes embedded into the slide show no doubt assisted in the ease of delivery.

In regard to improving the intervention program it appears that the debrief session at the end of training did not satisfactorily occur, at least for some participants. This may be due to forgetfulness and fatigue on the part of the instructors, or merely that trainees did not readily recall the debrief session due to information overload and fatigue. In either case a solution to this problem must be found as reinforcement of the intervention concepts is important if they are to be internalised long-term. Follow-up of riders by telephone in the initial weeks following completion of training is an option to discuss intervention concepts in conjunction with the take-home toolkit booklet and the actual application of the concepts to on-road riding. A brief take-home DVD has also been designed with the aim of meeting these goals.

Additionally, the instructors felt that the program needed to be trimmed to allow more discussion about fewer concepts. This is an important aspect if effective learning is to occur. Hence, any training program needs to carefully consider and monitor the amount of information presented to maximise understanding by participants, engagement in the program, and information retention. It remains unknown if the duration of this brief intervention is optimal. Further design of interventions of this type could explore the effect of extending program duration but spacing learning over several weekly sessions if the context allowed.

For trainee riders it appears that the intervention concepts made sense however may not have been as readily embraced by those with previous riding experience as for those who were absolute novices. Absolute novices may be regarded as ‘blank slates’ (Tabula Rasa) and acceptance of the intervention concepts for this target audience may best be considered in terms of motivation to learn. However, for some riders with previous experience there is a need to actually change fundamental beliefs towards risk. To this extent the pilot intervention may not have *challenged* pre-existing beliefs about risk taking enough. Overall it appears that the pilot intervention was successful in *raising awareness* of risk factors, however its affect in regard to actual behaviour change remains unclear. Whilst this is somewhat of a positive result, it does not meet the overall goals of the intervention. This may be improved by decreasing

the amount of content in the intervention as previously discussed so that more in-depth discussion can take place regarding the focal behaviours.

Lastly, on occasions where the intervention was delivered of an evening as part of an overall classroom session it may not have had its optimal effect. It appears that there is a need for training programs to specifically follow up information learnt in the classroom with practical riding in the same day. This is consistent with previous findings of Rowden et al. [9]. This is not to say that the intervention will not work as a stand alone program, rather that expectations of training may influence engagement in the program. If rider trainees attend training with the primary goal of learning vehicle-control skills then classroom learning may be diminished if it is not framed in a manner that is consistent with trainee expectations.

Conclusion

It is too often taken for granted that the information that is delivered in training is actually received by learners in the manner that is intended, or to the optimal degree. To this end, this evaluation has been integral in informing further refinement of the Three Steps to Safer Riding intervention and providing others who intend to develop driver or rider education programs with a foundation in regard to important issues for review.

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Appendix A

Instructor Interview Questions

Q1. What do you think are the strengths of the program?

Q2. What do you think are the weaknesses of the program? Do you have any suggestions for improvement in this regard (e.g. videos, PPT slides, risk taking scenarios, toolkit, too much scope to get things confused with standard training)?

Q3. Please describe any situations where the students misinterpreted/misunderstood any information provided in the intervention? (e.g. is there any other feedback from the students that you feel requires action, for instance, Personal Risk Factors don't make sense).

Q4. Do you feel that the students engaged sufficiently in the program (e.g. active participation through group discussion)?

Q5. Is the program easy to deliver for rider trainers or are further skills ideal (e.g. is the program too rigid that it doesn't allow for your individual training style)?

Q6. Tell me about any concerns you had before the intervention started and were they addressed sufficiently (e.g. with Train the trainer sessions).

Q7. Tell me how you've managed the change from standard training to intervention & vice versa and was this difficult to manage?

Q8. What do you think of the amount of time allocated for the 3 Steps to Safer Riding intervention (e.g. is it difficult to complete in the allocated time or does it detract from valuable time required on the motorcycle)?

Q9. Do you think the program is better suited to a particular group of riders and how (e.g. new riders vs some experience, male vs female, any groups that don't work)?

Q10. Do you think it's feasible to continue the intervention long-term?

Chief Instructor Interview Questions

Q1. Is the program easy to deliver for rider trainers or are further skills ideal (e.g. did trainers express any difficulties to you in understanding or coping)?

Q2. Can you tell me about any difficulties / challenges encountered in managing the new program (e.g. did trainers support the program, paperwork, time)?

Q3. In your observations of the trainers during the pilot intervention do you think all aspects of the program were delivered as intended (e.g. toolkit, debrief, consistency across groups & time).

Q4. Have you observed the classroom training much since the intervention pilot finished, and do you think the trainers had any problems "turning off" (i.e. reverting to standard training, any crossover with intervention concepts or terminology).

Q5. There appears to be more people go through your training that didn't participate in the study (questionnaires) than in the standard training cohort. Can you tell me about some of the things that may have affected this?

Q6. Do you think the program is better suited to a particular group of riders and how (e.g. new riders vs some experience, male vs female, any groups that don't work)?

Q7. What do you think of the amount of time allocated for the 3 Steps to Safer Riding intervention (e.g. is it difficult to complete in the allocated time to get the key messages across)?

Q8. From a business point of view, tell me how sustainable the program is and potential challenges you see for the future?

Appendix B

Focus Group & Individual Interview Questions for Intervention Participants

Q1. What can you tell me about the 3 Steps to Safer Riding?

Prompt: The 3 Steps stand for some of the things you need to consider for your safety....is it a useful way to remember things?

Q2. What 6 Personal Risk Factors were covered in the training and have you found these useful for your riding?

Q3. The 3 Steps session went for about an hour in your training in the classroom. What do you think about this timeframe?

Q4 What do you think about the “Toolkit” booklet to remind you of how to be a better and safer rider, and did you use it much?

Q5. What do you think about the video clips showing different riding situations?

Q6. Did the trainer get you involved in discussions and was that a good way to learn?

Q7. What issues came up in the 3 Steps program that challenged your own beliefs or attitudes about riding and/or made you change your mind (e.g. riding with mates, aggression)?

Q8. Now that you’ve been licensed for a while can you recall the last time you thought about the things in the 3 Steps program and has it helped you out on the road?

Q9. Overall, what did you think of the 3 Steps to Safer Riding program & is there any way to improve it?